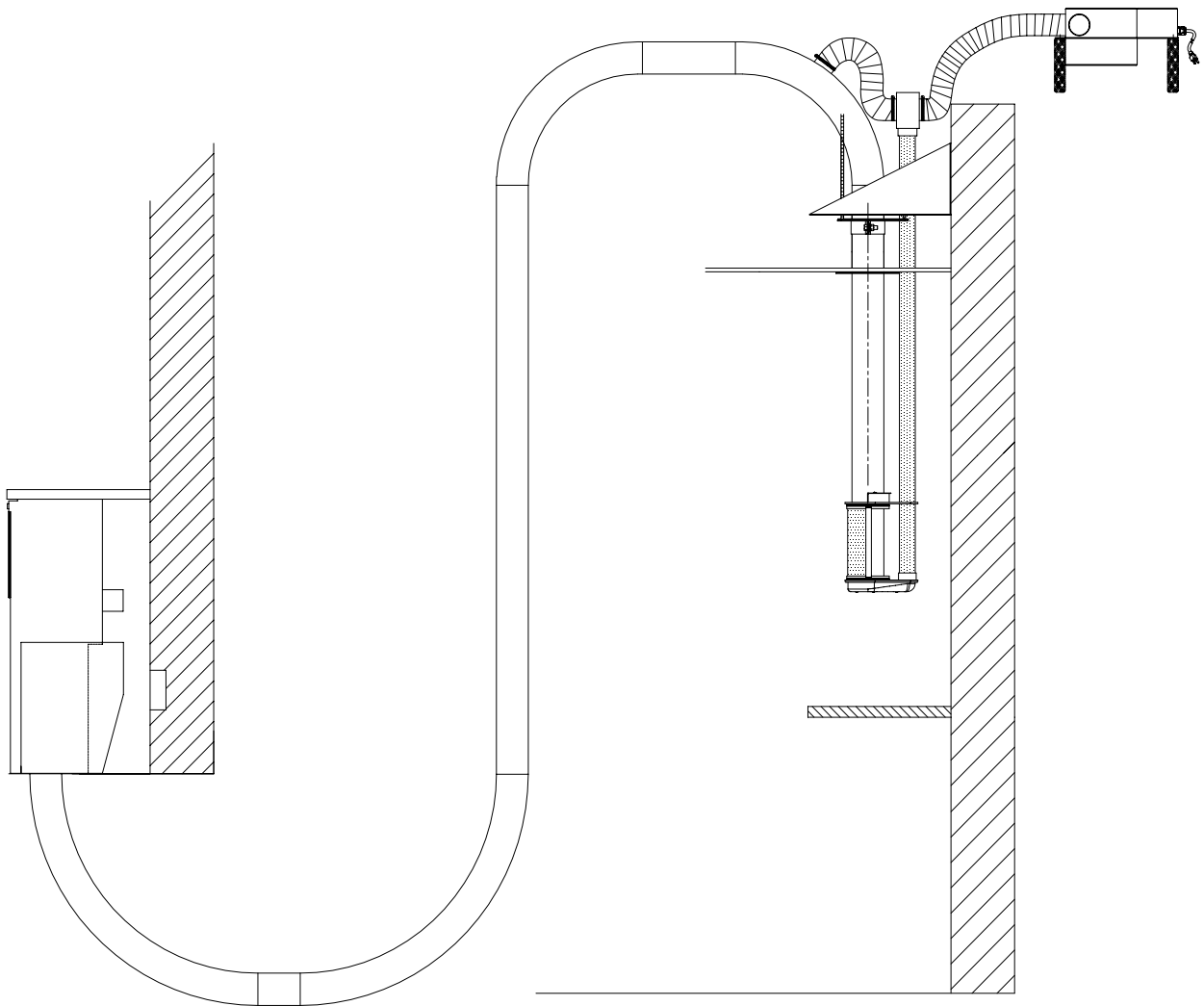
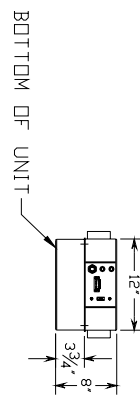
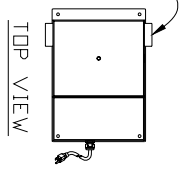


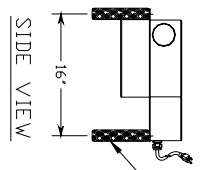
## HT-19 Pneumatic Transport System with I/O Down Send Teller Unit



TURBINE CONNECTION PORT  
LOCATED ON THIS SIDE  
FOR CONNECTION TO SYSTEM



FRONT VIEW



SIDE VIEW

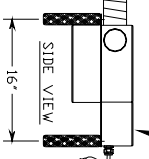
TURBINE DETAILS  
PART NUMBER B10004

PVC 20" RADIUS BEND  
WITH 3" NIPPLE  
SUPPLIED WITH SYSTEM

NOTE: TURBINE MAY BE REMOVELY LOCATED  
IN UTILITY CLOSET, MECHANICAL ROOM, ETC.

3" FLEX-HOSE PART NUMBER B2948  
(CONNECTION BETWEEN TURBINE AND VALVE  
CAN BE EXTENDED USING RIGID TUBING)

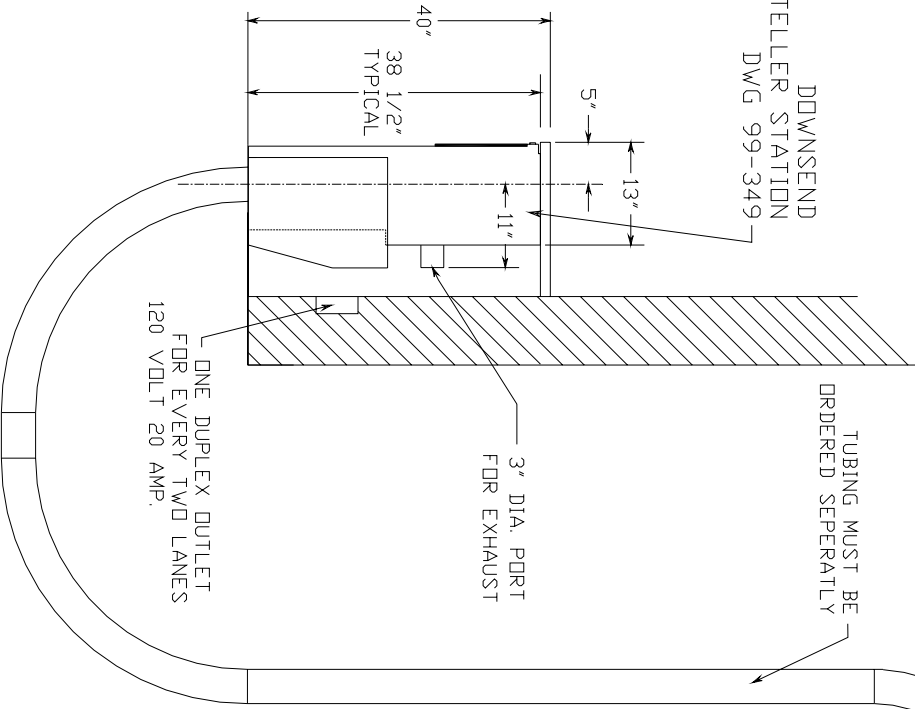
NOTE: TURBINE UNIT MUST BE  
SETTING FLAT ON ITS BOTTOM  
AS SHOWN TO OPERATE PROPERLY.



120 VDLT 60HZ  
20 AMP  
DUPLEX OUTLET

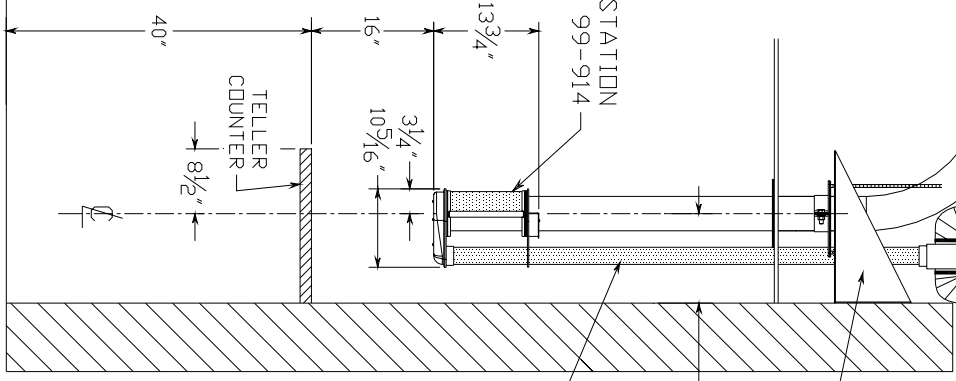
TUBING MUST BE  
ORDERED SEPERATLY

DOWNSEND  
TELLER STATION  
DWG 99-349



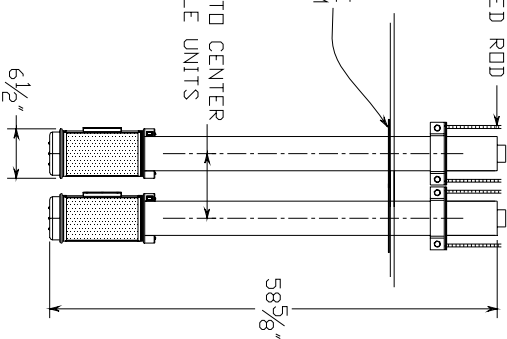
SUPPORT STRUCTURE SHOWN  
LOCATED ON 16" CENTERS

POWER STATION  
DWG 99-914



OPTIONAL TELLER UNIT  
WALL MOUNT BRACKET  
7 1/16" MIN  
CL TO WALL  
VENT TUBE

8 1/2" CENTER TO CENTER  
FOR MULTIPLE UNITS



TELLER  
COUNTER

Rev - 1	I/D Type Controls
Rev - 2	

**HAMILTON AIR**  
MODEL HT-19 D  
PNEUMATIC TRANSPORT SYSTEM  
DOWN SEND, ONE END  
Drawing Number : 99-1024 Date : 3/24/04

## HT-19 Pneumatic Transport System

### Description:

The HT-19 Pneumatic Transport System is a “point-to-point” type of tube system utilizing remote mounted turbine motors for quiet operation at both end stations. The Down Send Teller option utilizes the Hamilton teller unit mounted under a counter top on one end of the system. The unit is capable of transporting goods, weighing up to 5 lbs., very quickly.



“Power End Station”



“Down Send End Station”

### Standard Operation:

The HT-19 Pneumatic Transport System with Down Send Teller unit is shipped standard send and recall functions from both end stations. Closing the door of the manual end station will dispatch the carrier automatically to the down send end station. The carrier can be recalled to either the manual or down send end stations by pressing either recall button.

# HT-19 Pneumatic Transport System

## Bill of Materials:

As Shown in Figure #1

Quantity	Description	Part Number
1	Standard Teller Unit Complete	99-914
1	Down Send Teller Unit	99-395
1	PVC 20" Radius Bends with 3" Nipple	T9608
2	PVC to Steel Tube Adapters	T9705
2	PVC Tube Sleeves	T9602
1	Flap Valve Kit	T9715
1	HA-50 Turbine Unit	B10004
1	HT-19 Air Flow Control Valve	B5471
96	Inches of 3" Diameter Hose	B2948
4	Hose Clamps 3"	H1074

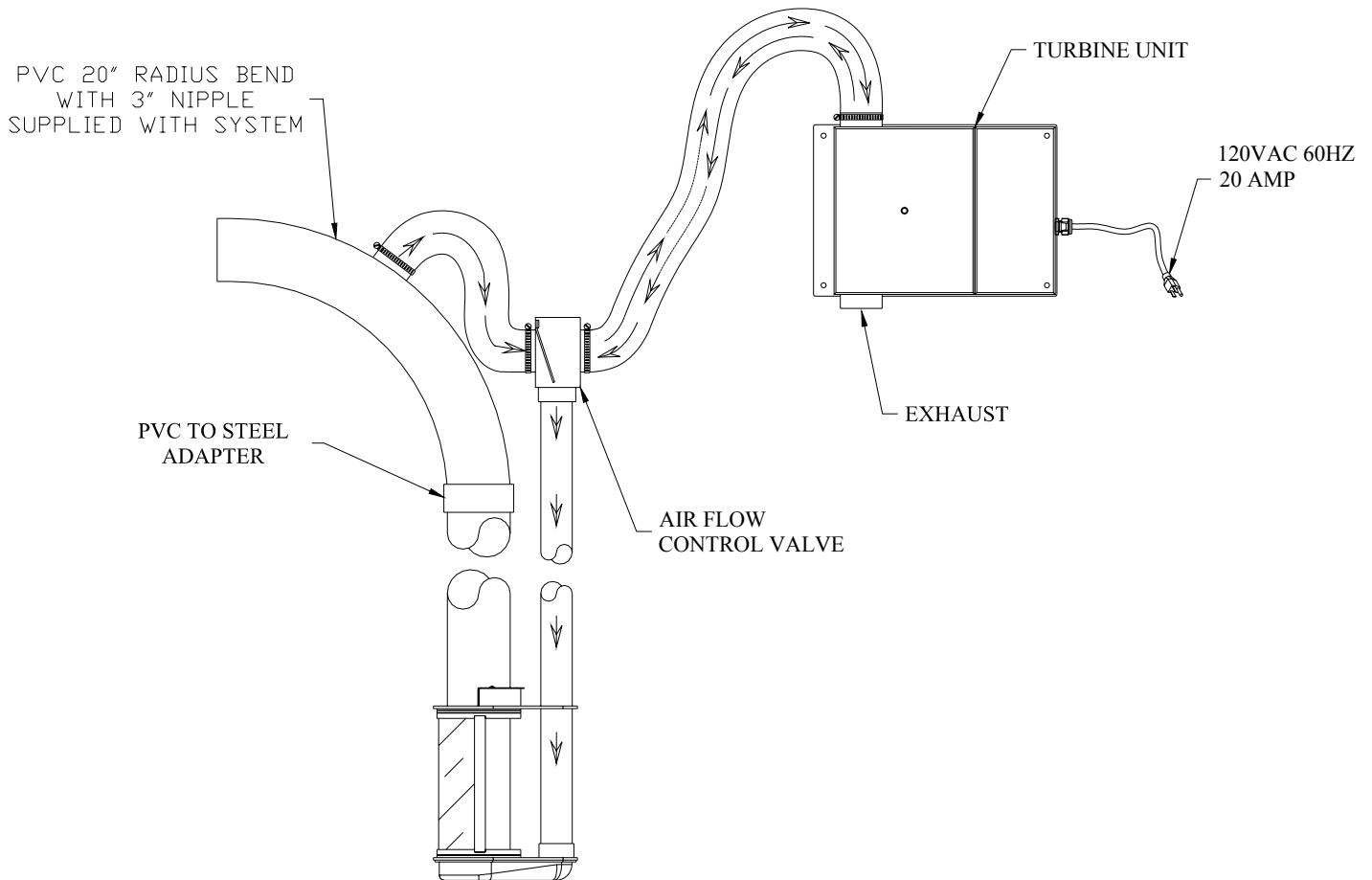


Figure 1

# HT-19 Pneumatic Transport System

## Installation:

### Down Send teller station:

The down send teller station control board will operate the entire system. The control board will require CAT5 connection to the manual teller station and 3 conductor, 18 gauge cable to the turbine unit. The program chip on the control board must be revision 2.00.01 or later to operate in this system.

### Location:

The Turbine Unit should be mounted in a location that noise from the turbine motors will not offend the users. This can be in a remote location such as a machine room, utility closet, above ceiling, etc. The three inch (3") hose, between the Turbine Unit and the Air Flow Control Valve, can be lengthened, with rigid pipe, to accommodate this remote location. The exhaust can also be ducted to a remote location, with three inch (3") hose and/or rigid pipe, to reduce noise. Size requirements are shown in figure #2.

### Electrical:

The power, for the HT-19 Pneumatic Transport System with Down Send Teller unit, is required for the turbine unit and the Down Send Teller unit. The turbine unit has a power cord factory wired and requires a 120 volt AC, 60 Hz, 20 amp outlet. The down send teller unit has a power cord factory wired and requires a 120 volt AC, 60 Hz, 5 amp outlet. A three conductor, 18 gauge interconnect wire is required between the down send teller unit and turbine unit. A CAT5 interconnect cable is required to connect the manual end station with the down send unit.

### Air Flow Control Valve:

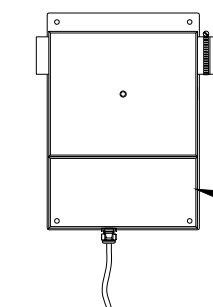
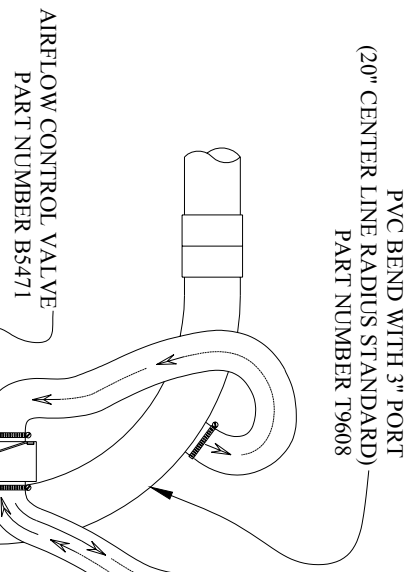
The Air Flow Control Valve will be located on top of the exhaust tube from the back of the manual end station terminal. Using RTV silicone adhesive, seal the two and a quarter inch (2-1/4") I.D. coupler, on the Airflow Control Valve, over the black exhaust tube. Confirm that the exhaust tube is sealed to the teller terminal also. Attach the Airflow Control Valve so to have sufficient clearance for the connection of the three inch (3") hoses to the other couplers. Connect a length of three inch (3") hose to the top fitting of the turbine unit and the other end to the air flow control valve fitting marked **"To Turbine"** (**This is the fitting opposite of the rubber flap inside the Airflow Control Valve**). Example: When turbine creates pressure, this rubber flap closes off the 3" hose connected to the elbow, forcing the air down the 2-1/4" exhaust tube and into the teller terminal lifting the carrier) as shown in Figure 1. Then connect the fitting with the flap, on the air flow control valve, to the three inch (3") fitting, on the tube elbow, located above the manual end station.

Rev - 1
Rev - 2

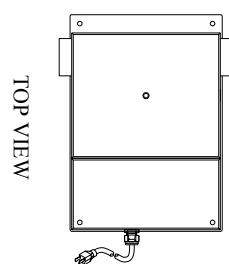
TURBINE CONNECTION PORT  
LOCATED ON THIS SIDE  
FOR CONNECTION TO SYSTEM

3" FLEX-HOSE (8FT INCLUDED PER LANE)  
PART NUMBER B2948  
(CONNECTION BETWEEN TURBINE AND VALVE  
CAN BE EXTENDED USING RIGID TUBING)

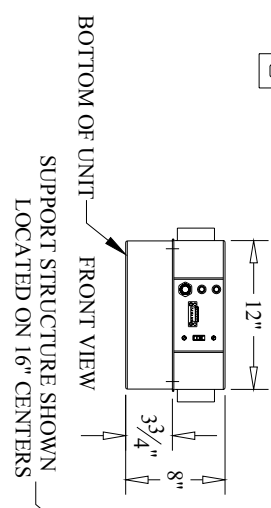
NOTE: TURBINE UNIT MUST BE SETTING  
FLAT ON ITS BOTTOM TO OPERATE PROPERLY.  
UNIT TOP VIEW SHOWN.



120 VOLT 60Hz  
20 AMP  
DUPLEX OUTLET



TOP VIEW



FRONT VIEW  
SUPPORT STRUCTURE SHOWN  
LOCATED ON 16" CENTERS

SIDE VIEW

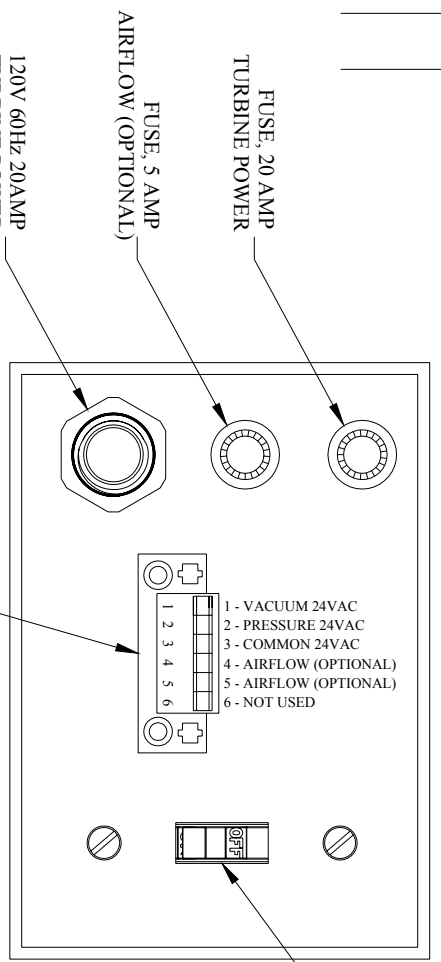
ACRYLIC TUBE SET, CLEAR  
INCLUDES 4-1/2" AND 2-1/4"  
STANDARD IS 8'-0" LONG  
PART NUMBER T9719

ADAPTER, ACRYLIC-TO-PVC  
PART NUMBER T9704

CEILING LINE  
PART NUMBER T9713

AIRFLOW CONTROL VALVE  
PART NUMBER B5471

PVC BEND WITH 3" PORT  
PART NUMBER T9608



FUSE, 20 AMP  
TURBINE POWER

FUSE, 5 AMP  
AIRFLOW (OPTIONAL)

120V 60Hz 20AMP  
TURBINE POWER

TURBINE INTERCONNECT CABLE  
REQUIRES A MINIMUM  
OF 5 CONDUCTORS  
(STANDARD 7 CONDUCTOR  
CABLE IS SUPPLIED E0853)

TURBINE POWER SWITCH

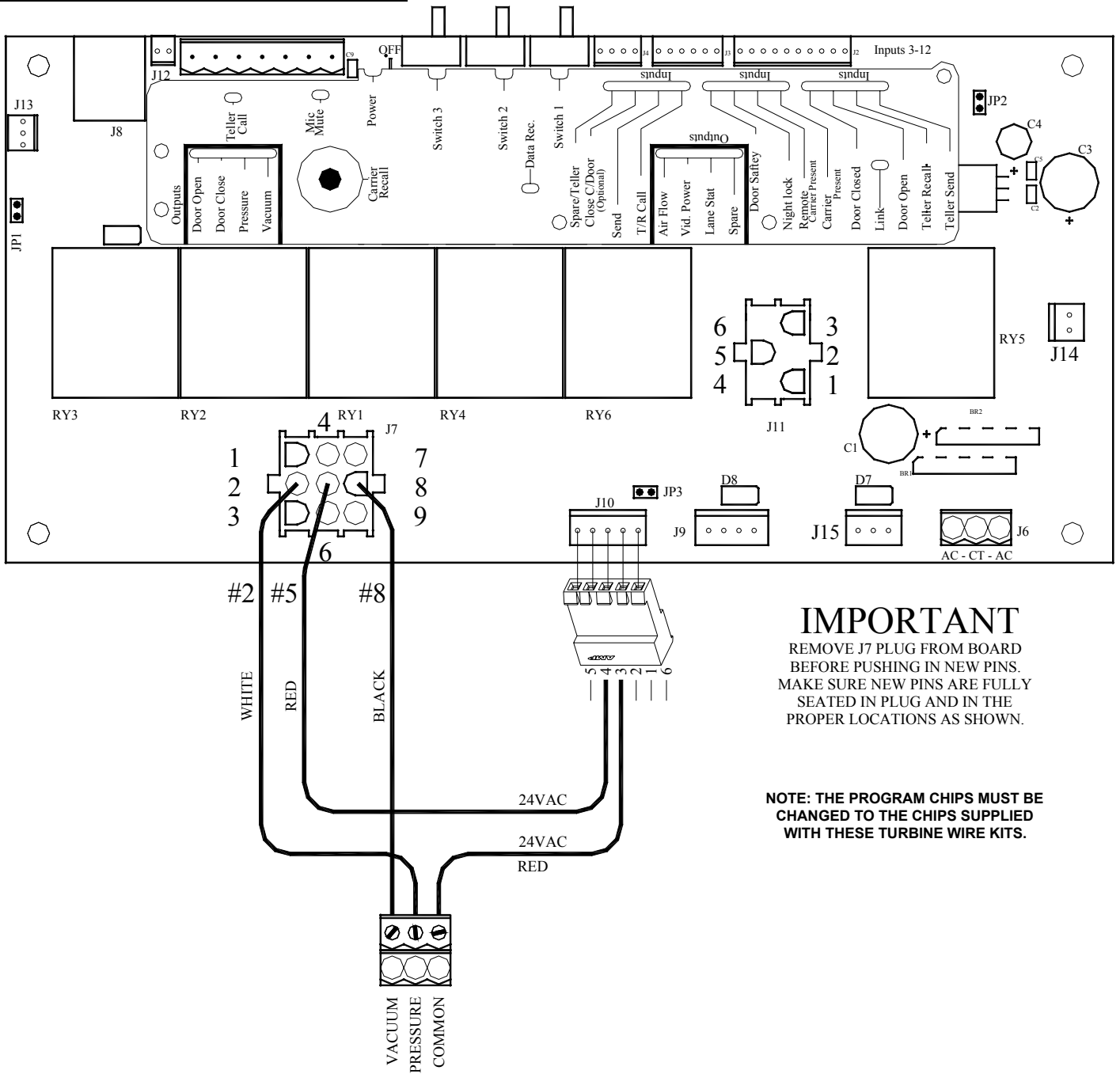
HAMILTON AIR

MODEL HA-50  
TURBINE UNIT DETAILS  
TURBINE PART NUMBER B10004

Drawing Number : 99-954 Date : 4/3/09

# HT-19 Pneumatic Transport System

## Down Send Teller unit control board:



**Note: Program chip must have software revision 2.00.01 or later to operate properly in this system.**

**Add turbine connection harness as shown above. Make sure to install cables into J7 connector completely so they snap in and will not pull out.**

**If cables are pushed in incorrectly, a pin extractor tool must be used to remove these pins.**

## **HT-19 Pneumatic Transport System**

### **Down Send Teller Setup:**

The down send teller unit is shipped with normal settings for a teller unit. When we use this unit in the HT19 system, we have to setup the control board in the down send teller to be the master board. The settings will be the same as a customer unit in a manual teller tube system with a change to the function of the recall button. When the board is setup as a customer board, the recall button will act like a call button for the audio system. We will change this function so it works as a recall button in this system.

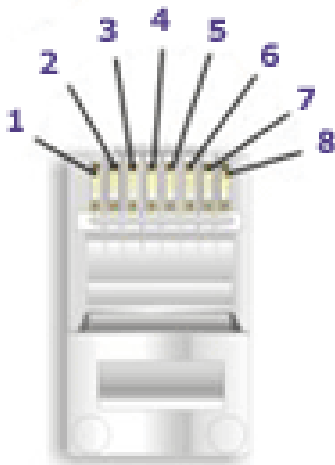
- 1) Verify program chip software revision to be 2.00.01 or later. Replace if necessary with correct program chip.**
- 2) Verify jumper settings.**
  - a. JP1 = "ON"**
  - b. JP2 = "ON"**
  - c. JP3 = "ON"**
- 3) Verify all three function switches**
  - a. Switch #1 = "OFF"**
  - b. Switch #2 = "OFF"**
  - c. Switch #3 = "OFF"**
- 4) Connect Power to the down send teller unit.**
- 5) Wait until "Vid. Power" LED is lit. (about 5 seconds)**
- 6) Release "Nightlock" button on counter teller unit.**
- 7) Press "Carrier Recall" switch on control board. System will cycle and end with belt motor running the belts up.**
- 8) Change Recall function.**
  - a. Press and hold "Carrier Recall" switch on control board, Turn on "Switch #3", and press the carrier recall button on the down send teller unit.**
    - i. "Teller Call" LED will flash once for CALL function**
    - ii. "Teller Call" LED will flash twice for RECALL function**
  - b. Release "Carrier Recall" button and press again with carrier recall button on the counter teller unit to toggle this function. Note, both button must be release each time to toggle function.**
  - c. Once you have this set to two flashes of the "Teller Call" LED, turn "Switch #3" to off position.**
  - d. Now recall button on the down send teller unit is set to recall the carrier.**



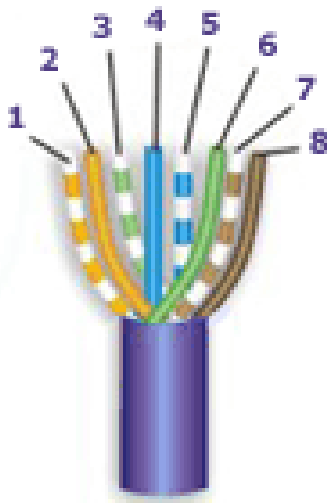
## Interconnection Cable

### CAT5 Interconnect Cable Wiring

The I/O control board system requires an interconnect cable to connect the manual teller unit to the control board located in the counter top teller unit. This cable is a standard category 5 (CAT5) cable, Hamilton part number E0889, and terminated with male RJ-45 connectors on both ends. The connectors should be wired in the straight through design as shown below on both ends. There are commercially available testers that can be used to verify correct connector installation and function.



Wire	Pin #	Teller Connections
White/Orange	1	Spare
Orange	2	Teller Nigh Lock
White/Green	3	Teller Carrier Arrival
Blue	4	Teller Recall
White/Blue	5	Door Closed / Teller Send
Green	6	Common
White/Brown	7	RS485 A
Brown	8	RS485 B



## **Blower Run-Time Set Procedure**

### **Blower Run Time Set**

The “blower run time” is set using switch number one (SW1), which is located on the control board in the control unit. The unit is shipped with a default time stored of about 3 seconds. This procedure will overwrite any existing times set in system. This time can be reset as often as necessary. **Power failure will NOT affect the times stored.**

#### **To restore default blower run times:**

- 1) Turn power “OFF” to unit.
- 2) Turn SW1 “ON”.
- 3) Turn power “ON” to unit.
- 4) Return SW1 to “OFF”.
- 5) Default blower run time is restored.

The blower run time can be set with both directions of carrier travel using the same time or individual times for the two directions of carrier travel.

#### **Setting procedure for blower run time. (Single time for both directions)**

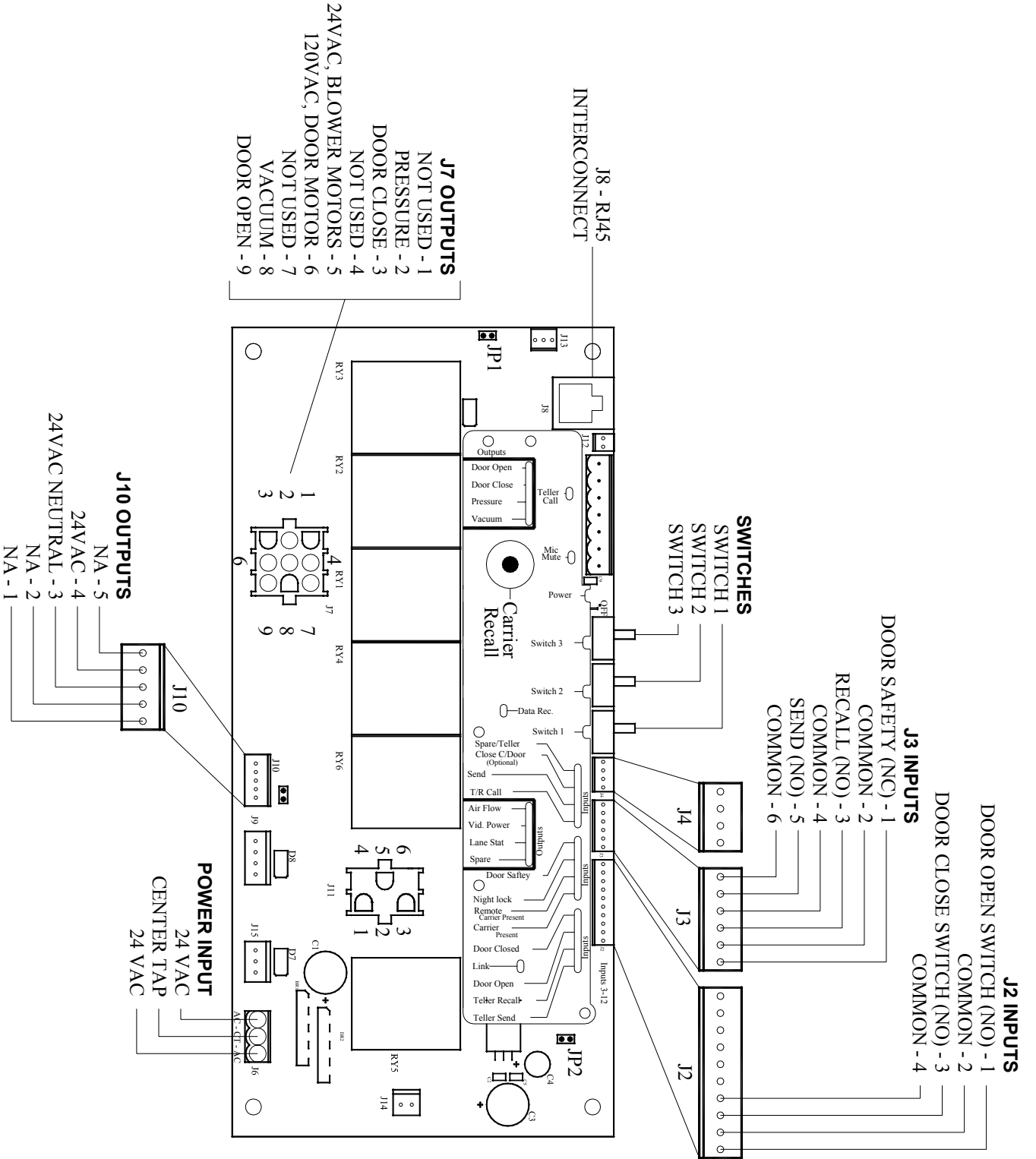
- 1) Before beginning, the carrier must be in the down send unit with door open and manual teller door closed.
- 2) Turn SW1 to the “ON” position. (LED indicator will light)
- 3) Push and hold the manual end station “Recall” button until carrier arrives in the end station. Releasing button stores the time for this cycle.
- 4) Turn SW1 to the “OFF” position to store the cycle time for both directions.

#### **Setting procedure for blower run time. (Individual cycle time for each direction)**

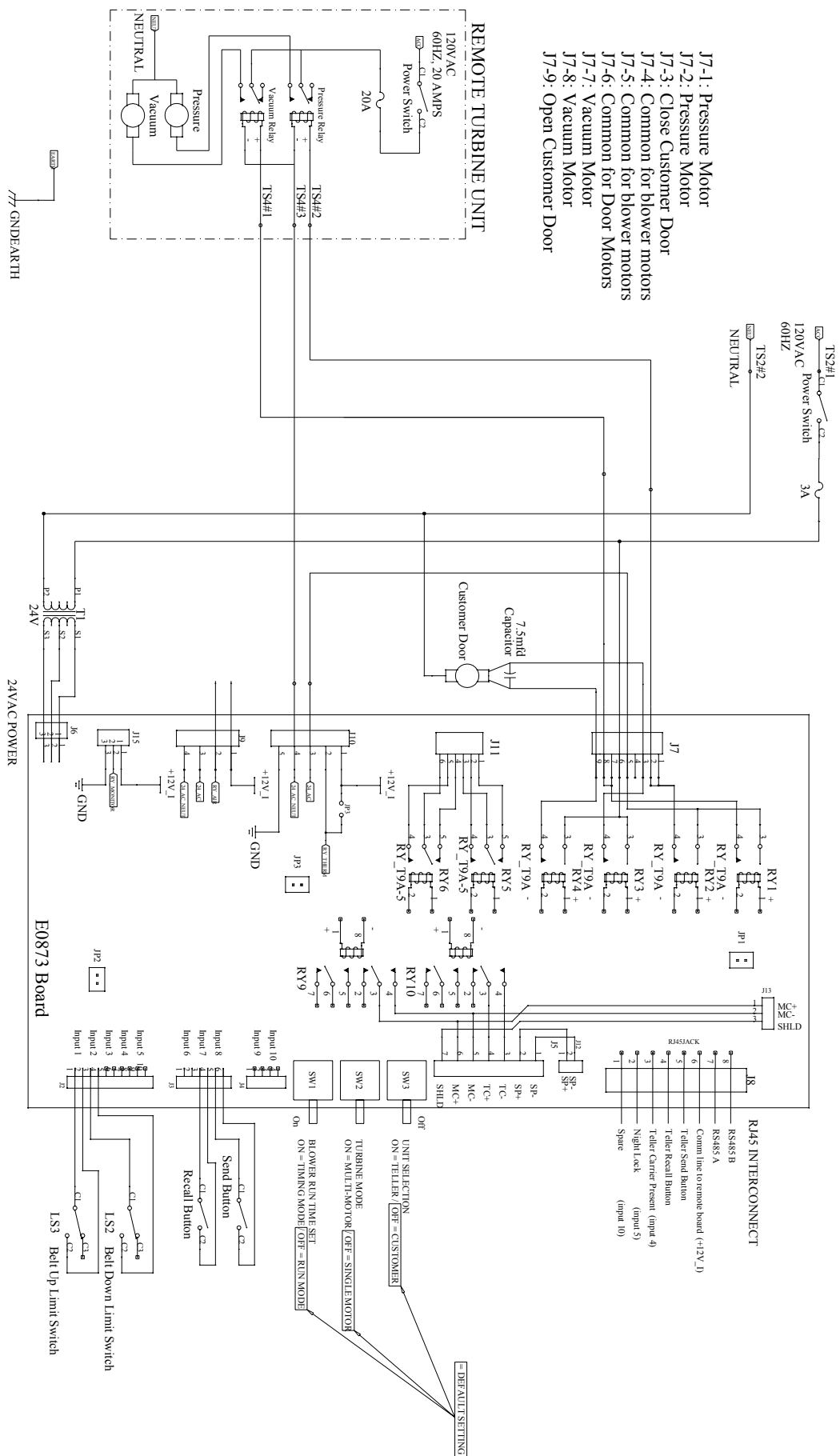
- 1) Before beginning, the carrier must be in the down send unit with door open and manual teller door closed.
- 2) Turn SW1 to the “ON” position. (LED indicator will light)
- 3) Push and hold the manual end station “Recall” button until carrier arrives in the end station. Releasing button stores the time for this cycle.
- 4) Push and hold the down send station “Recall” button until carrier arrives in the down send station. Releasing button stores the time for this cycle.
- 5) Press and release the down send station “Recall” button again to open the door in the down send station. This stores a third time as a delay before door opens.

**Turn SW1 to the “Off” position to store the individual cycle times for each direction.**

# Down Send Teller Control Board Details



- J7-1: Pressure Motor
- J7-2: Pressure Motor
- J7-3: Close Customer Door
- J7-4: Common for blower motors
- J7-5: Common for blower motors
- J7-6: Common for Door Motors
- J7-7: Vacuum Motor
- J7-8: Vacuum Motor
- J7-9: Open Customer Door



- J1 JUMPER 1: MULTIPLE BOARD JUMPER. JUMPER "ON" FOR NORMAL OPERATION WITH MANUAL TELLER UNIT. JUMPER "OFF" ONLY WHEN USED IN DUAL CONTROL BOARD SYSTEMS.
- J2 JUMPER 2: REMOTE INPUT JUMPER. JUMPER "ON" FOR NORMAL OPERATION WITH MANUAL TELLER UNIT. JUMPER "OFF" ONLY WHEN USED IN DUAL CONTROL BOARD SYSTEMS.
- J3 JUMPER 3: DOOR MOTOR AUXILIARY THERMAL PROTECTION JUMPER. JUMPER "ON" FOR NORMAL OPERATION IN ALL UNITS EXCEPT HA33. JUMPER "OFF" ONLY IF THE DOOR MOTOR HAS AUXILIARY CONNECTIONS FOR THERMAL PROTECTION (HA33 ONLY).

- Input 1: Door Open
- Input 2: Door Close
- Input 3: N/A
- Input 4: N/A
- Input 5: N/A
- Input 6: Door Safety
- Input 7: Call Button
- Input 8: Send Button
- Input 9: Optional auto door close
- Input 10: N/A